2014 Draft
Water Quality Assessment
and
Impaired Waters
Integrated Report

Virginia Department of Environmental Quality

January 2014

DEQ
VIRGINIA DEPARTMENT OF
ENVIRONMENTAL QUALITY

Public Comment

- Public comment period: December 15 – January 30
- Download Integrated Report via DEQ website:
  - http://www.deq.virginia.gov/programs/water/waterqualityinformationtmdls/waterqualityassessments/2014305(b)303(d)integratedreport.aspx
  - Maps available at: http://www.deq.virginia.gov/ConnectWithDEQ/VEGIS.aspx
- Webinar to be held on January 8th, 10:00 – 11:30AM
- Comments received either by first class mail to:

  John Kennedy
  DEQ-Water Quality Monitoring and Assessment
  P.O. Box 1105
  Richmond, VA 23218-1105
- Or via e-mail: john.kennedy@deq.virginia.gov

Key Factors for the Assessment

- Clean Water Act and VA Water Quality Monitoring, Information and Restoration Act require state to assess and report on the quality of state waters
- Assessments conducted in reference to VA Water Quality Standards as of January 2011
- Six Year Assessment Period: Jan. 2007 – Dec. 2012
- WQ data evaluated for multiple samples collected by DEQ at 4,328 stations
- 1,689 citizen monitoring stations used for assessment determinations

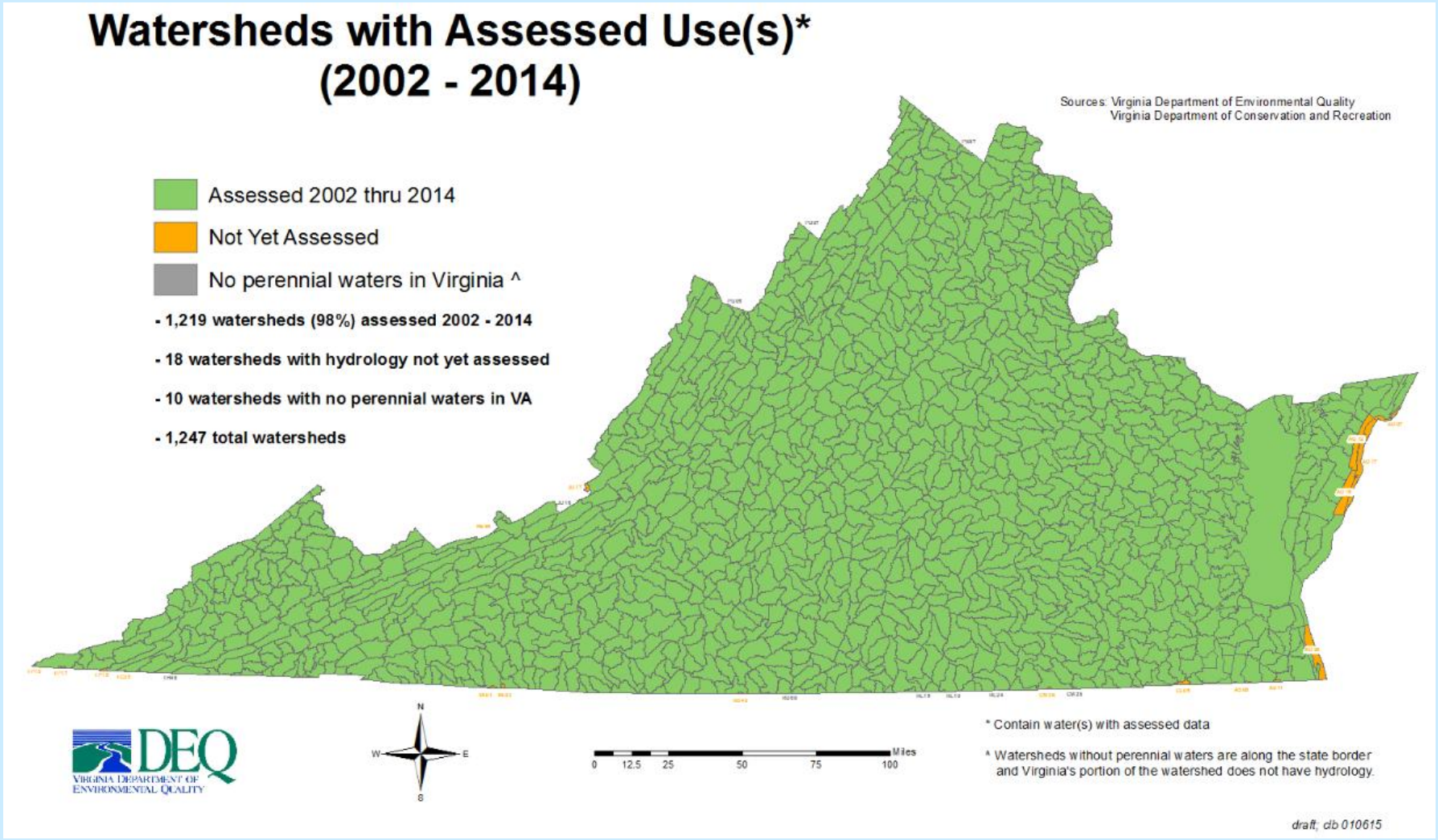
Designated Uses

DESIGNATED USE	SUPPORT OF USE DEMONSTRATED BY
Aquatic Life Use (sub-divided in Chesapeake Bay and Tributaries)	**Conventional Pollutants (Dissolved Oxygen, pH, Temp.);** **Nutrients and toxic contaminants found in sediments, toxics in water column;** **Biological evaluation**
Fish Consumption Use	**Advisories, limiting or restricting consumption (VDH);** **Exceeding state screening values for toxic pollutants found in fish tissue**
Shellfish Consumption Use	**Restricted harvesting and marketing of shellfish resources by Div of Shellfish Sanitation of VDH**
Swimming/Recreation Use	**Conventional Pollutant (Fecal Coliform Bacteria, E. coli, enterococci) and/or beach closures issued by VDH**
Public Water Supply Use	**Closures or advisories by VDH; comparison of data to applicable public water supply standards**
Wildlife Use	**Aquatic life toxics criteria in water column**

Monitoring Program Elements

- Ambient Watershed Network
- Estuarine Probabilistic
- Chesapeake Bay
- Citizen-Requested Monitoring
- Facility Inspection
- Freshwater Probabilistic
- Fish Tissue
- Mercury
- Incident Response
- Pollution Complaints
- Regional Biological
- Reservoir Monitoring
- Special Studies
- TMDL
- Trend Stations
- Observed Effects
- Non-agency Data

Assessments Done Within 98% of Watersheds from 2002 to 2014 Reports



EPA Integrated List

EPA Assessment Categories (since 2004):

1 = Water Quality Fully Supports All Designated Uses

2 = Water Quality Fully Supports All Uses Assessed

3 = Insufficient Data to make Assessment

4 = Impaired (No TMDL Needed)

5 = Impaired (TMDL May Be Needed)

Virginia added additional Subcategories in 2006 to help track TMDL implementation

2014 Assessed Areas

Waterbody Type	Total	Assessed	Attained Use	Impaired[1]
Rivers (miles)	100,927	22,127 (22% of total)	6,450 (29% of assessed)	15,677 (71% of assessed)
Lakes (acres)	117,179	114,212 (97% of total)	19,458 (17% of assessed)	94,754 (83% of assessed)
Estuaries (sq. miles)	2,836	2,446 (86% of total)	310 (13% of assessed)	2,136 (87% of assessed)

1 "Impaired" applies to both EPA Assessment Categories 4 and 5

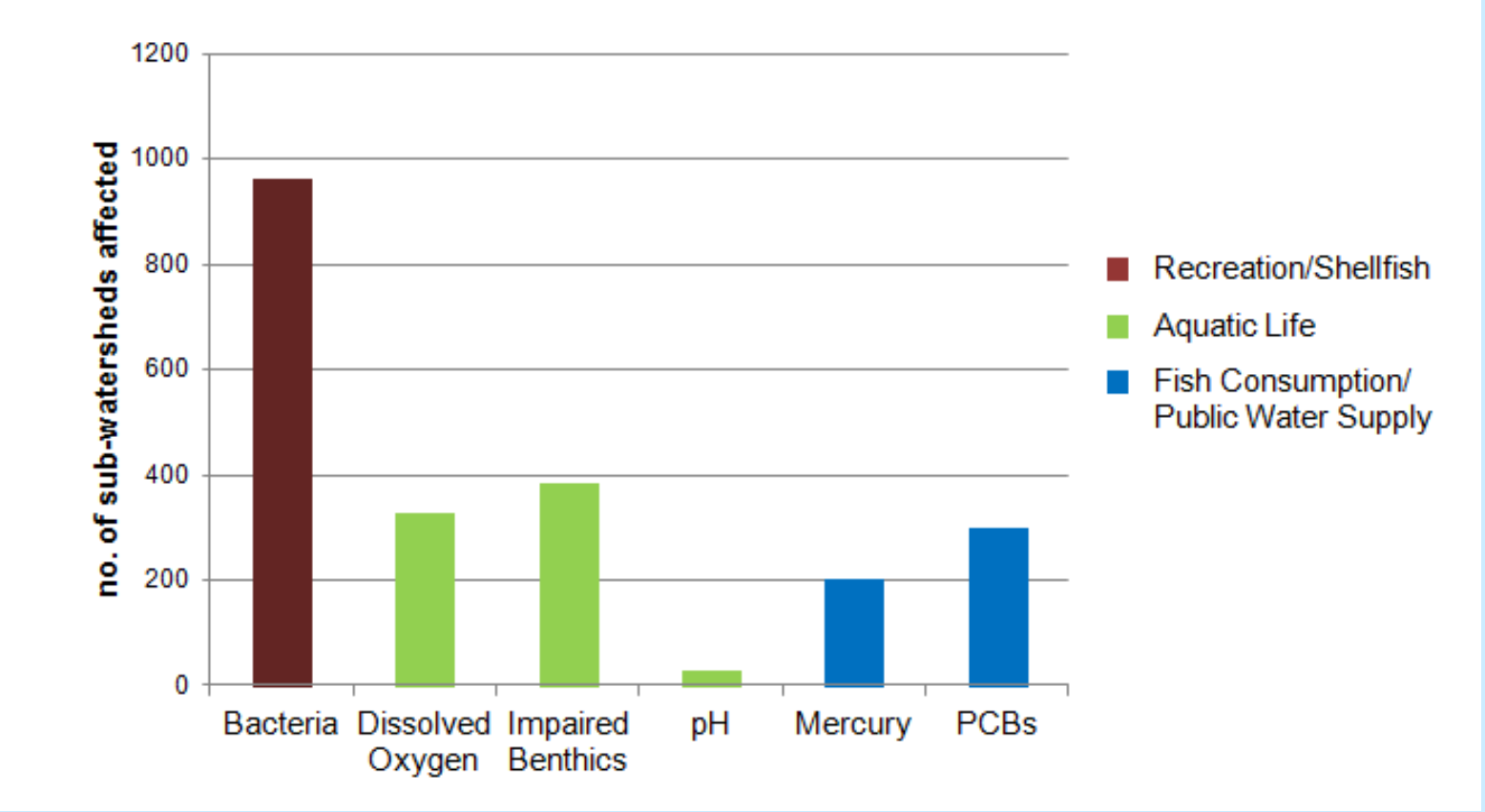
Note: Size adjustments using high resolution hydrography data account for discrepancies from prior cycle.

New Impaired Water Listings

New Impairments (Category 5A) in 2014:

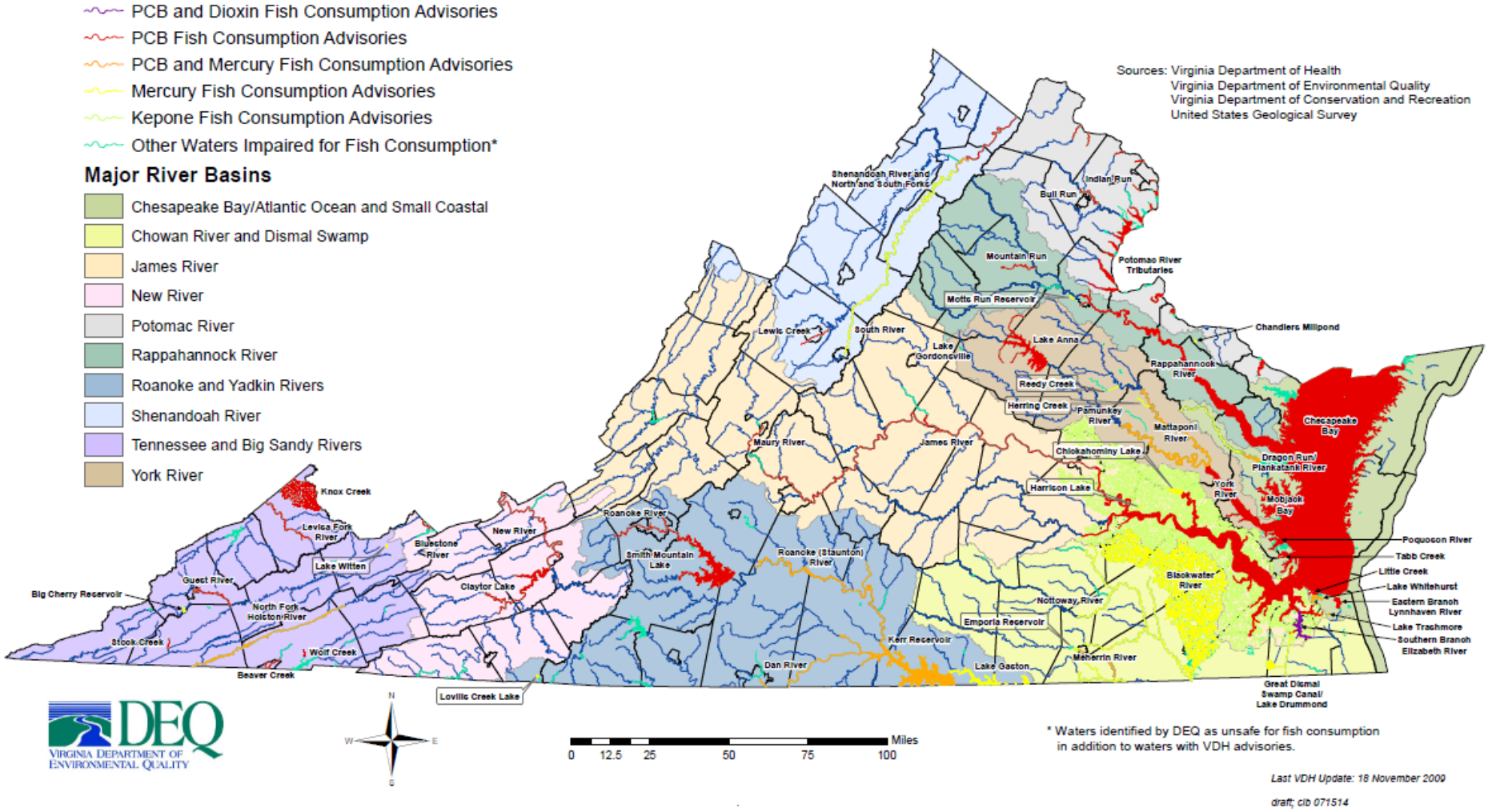
- Areas not previously scheduled for TMDLs; excluding both shellfish and natural impairments:
  - 528 miles of Rivers/Streams
  - 361 acres of Lakes
  - 4 square miles of Estuaries

Common Causes of Designated Use Impairment



Waters Under VDH Fish Consumption Advisories

Identified in the 2014 305(b)/303(d) Water Quality Integrated Report



Delisting of Waters
2002 - 2014

- Running total of 379 Fully Restored Waters:
  - 64 additional Full Delistings submitted for 2014:
    - 283 miles of Rivers/Streams
    - 291 acres of Lakes

- Running total of 1,800 Partially Restored Waters:
  - 273 additional Partial Delistings Proposed for 2014:
    - 490 miles of Rivers/Streams
    - 2,227 acres of Lakes
    - 592 square miles of Estuaries

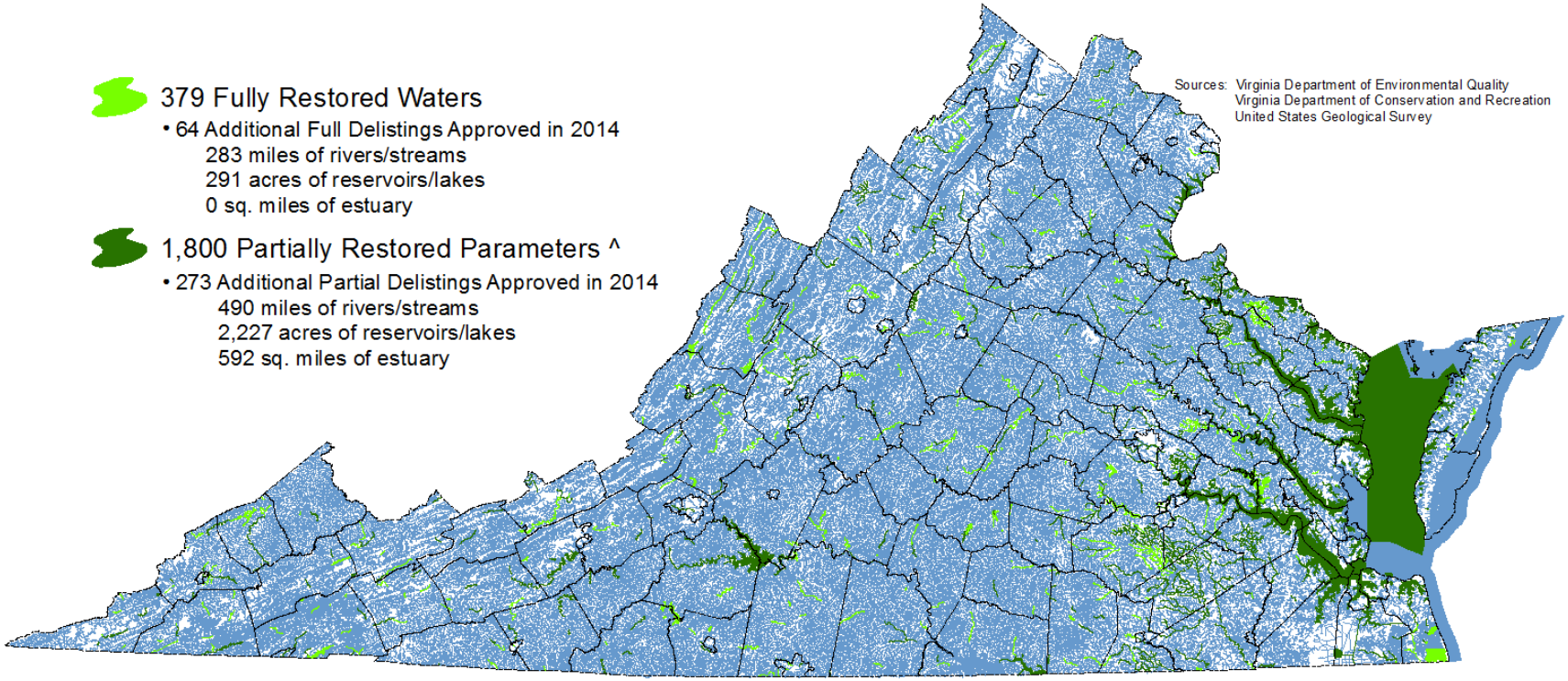
Additional Progress Indicators and Delisting Information

- Chesapeake Bay:
  - Parts of mainstem western shore have sufficient water clarity to support submerged aquatic vegetation (SAV).
  - Considerable SAV growth seen across the mainstem and tributaries. Upper Rappahannock and lower James continue to see dramatic increases since 2008. While still not achieving our goal, progress is encouraging.
  - Improved benthic community integrity found in the lower mainstem.
  - There are a number of previously condemned shellfishing areas that VDH has now deemed harvestable.
  - As elsewhere in the state, estuarine waters are also seeing declines in bacteria to such an extent that some areas can be delisted.

Additional Progress Indicators and Delisting Information (cont.)

- Bacteria level is the parameter most frequently involved in proposed delistings.
- Fish tissue monitoring program has returned on a limited scale, but has not resulted in new listings or delistings.
- Some delisted waters do come back on the list, but seriously impaired waters tend to stay on the list, allowing us to focus our resources on those areas.

Water Quality Restoration Progress* in Virginia



379 Fully Restored Waters
- 64 Additional Full Delistings Approved in 2014
  - 283 miles of rivers/streams
  - 291 acres of reservoirs/lakes
  - 0 sq. miles of estuary

1,800 Partially Restored Parameters ^
- 273 Additional Partial Delistings Approved in 2014
  - 490 miles of rivers/streams
  - 2,227 acres of reservoirs/lakes
  - 592 sq. miles of estuary

Sources: Virginia Department of Environmental Quality
Virginia Department of Conservation and Recreation
United States Geological Survey

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N
W E
S

0 12.5 25 50 75 100 Miles

* Restoration progress (i.e. Delist status) is cumulative thru December 2012.

^ Partial delisting totals are parameter based but include over 700 water bodies.

61 delisted Part 2 water permits are not included in the numbers above.

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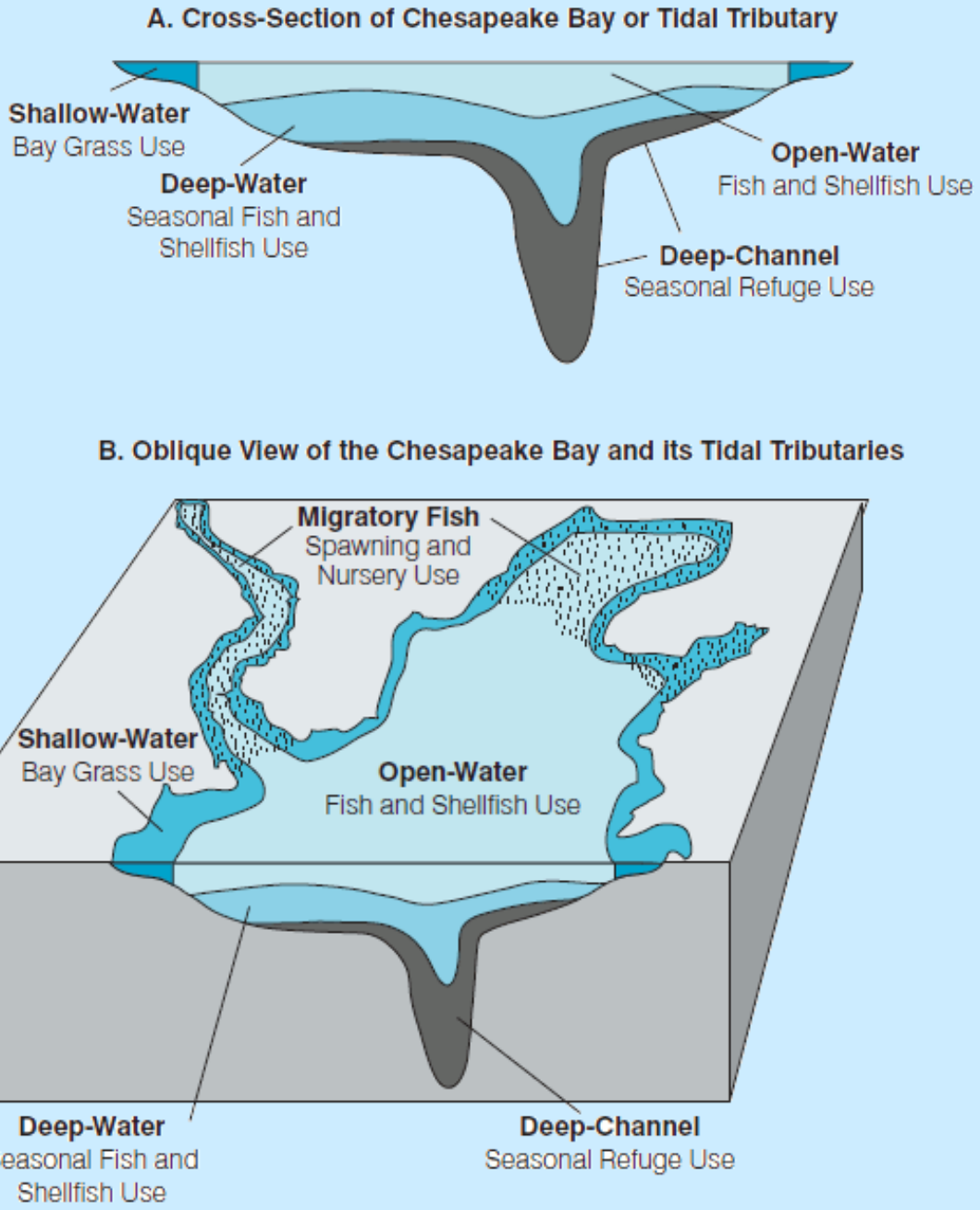
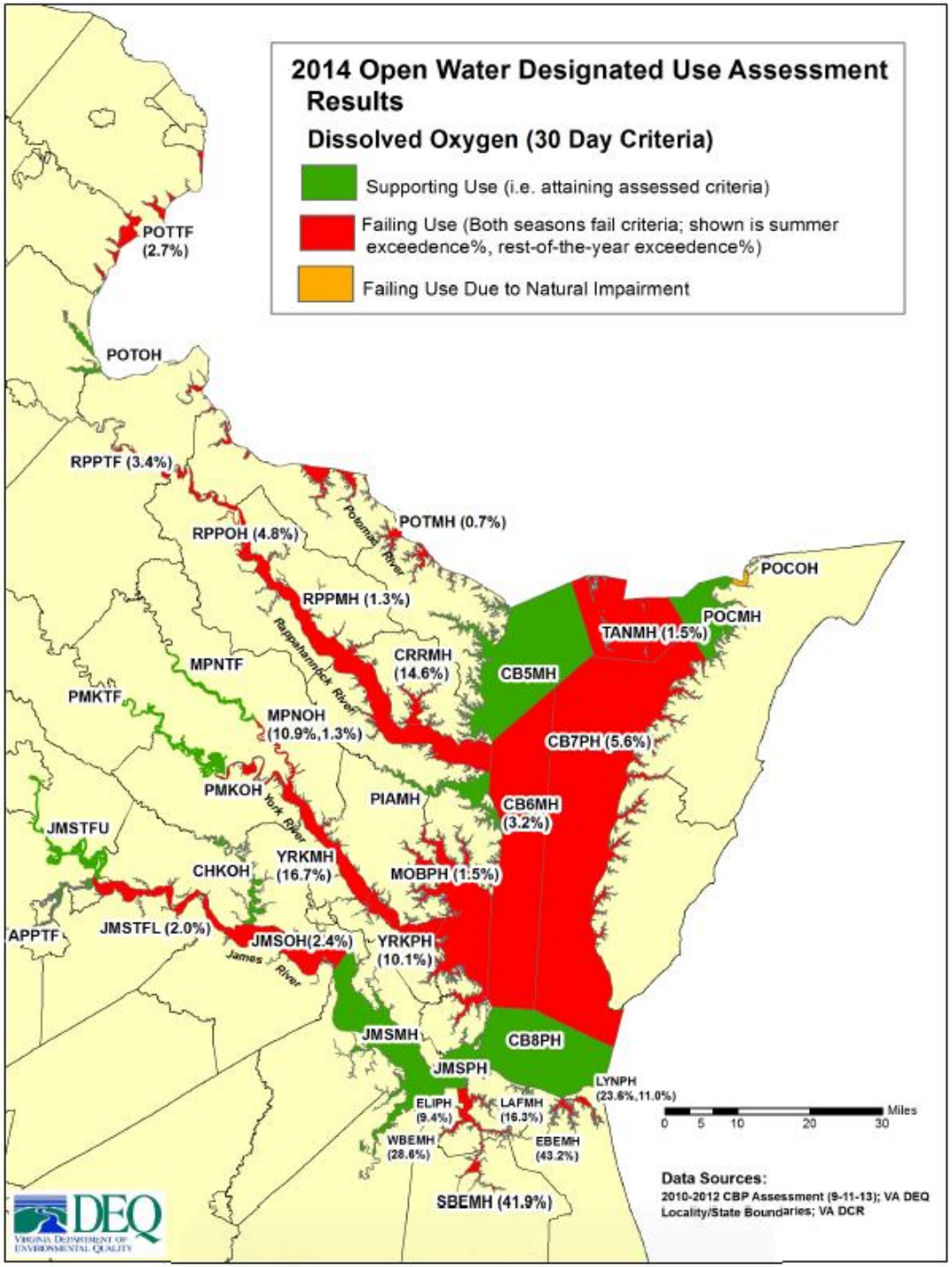
Ches. Bay & Tidal Tributaries Refined Designated Uses



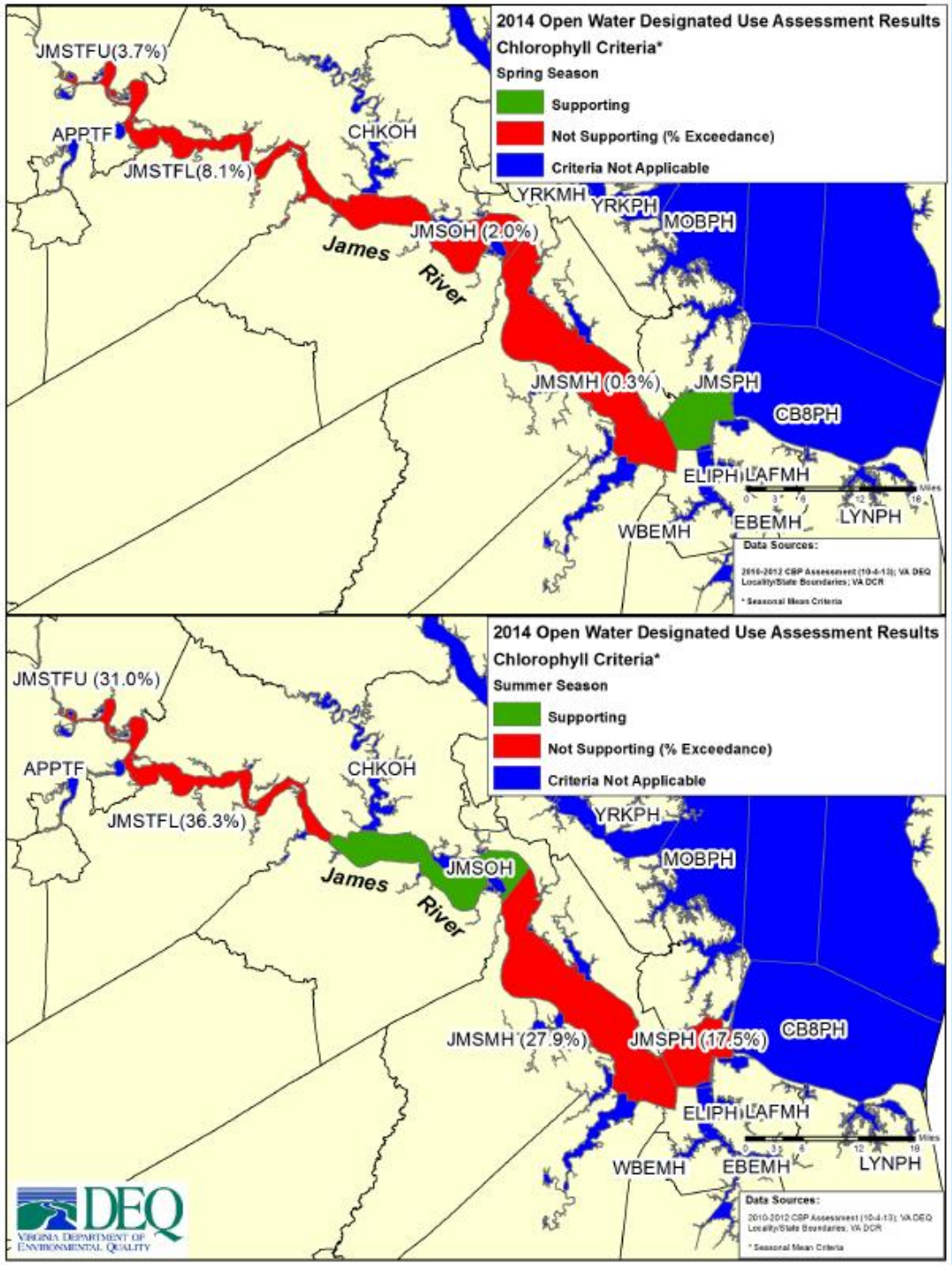
Ches. Bay and Tidal Tributaries:

- Highest Dissolved Oxygen violation rates are in the Elizabeth, Lynnhaven, and York Rivers.
- Hypoxia found in the Potomac River embayments.



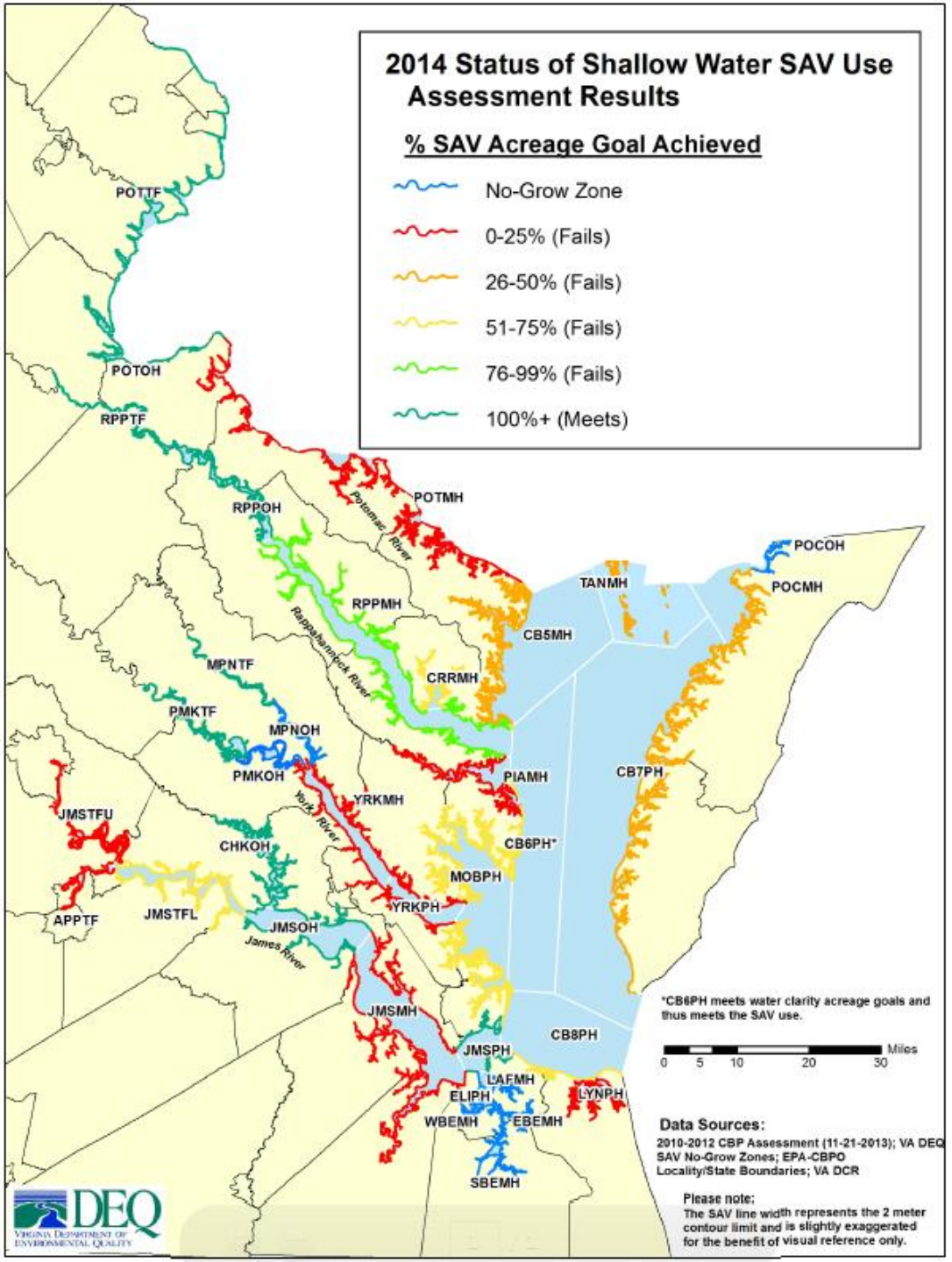
Ches. Bay and Tidal Tributaries:

- Numeric Chlorophyll criteria only apply to the James River
- Criteria were met in:
  - Lower James during the spring season
  - Middle James during the summer season



Ches. Bay and Tidal Tributaries:

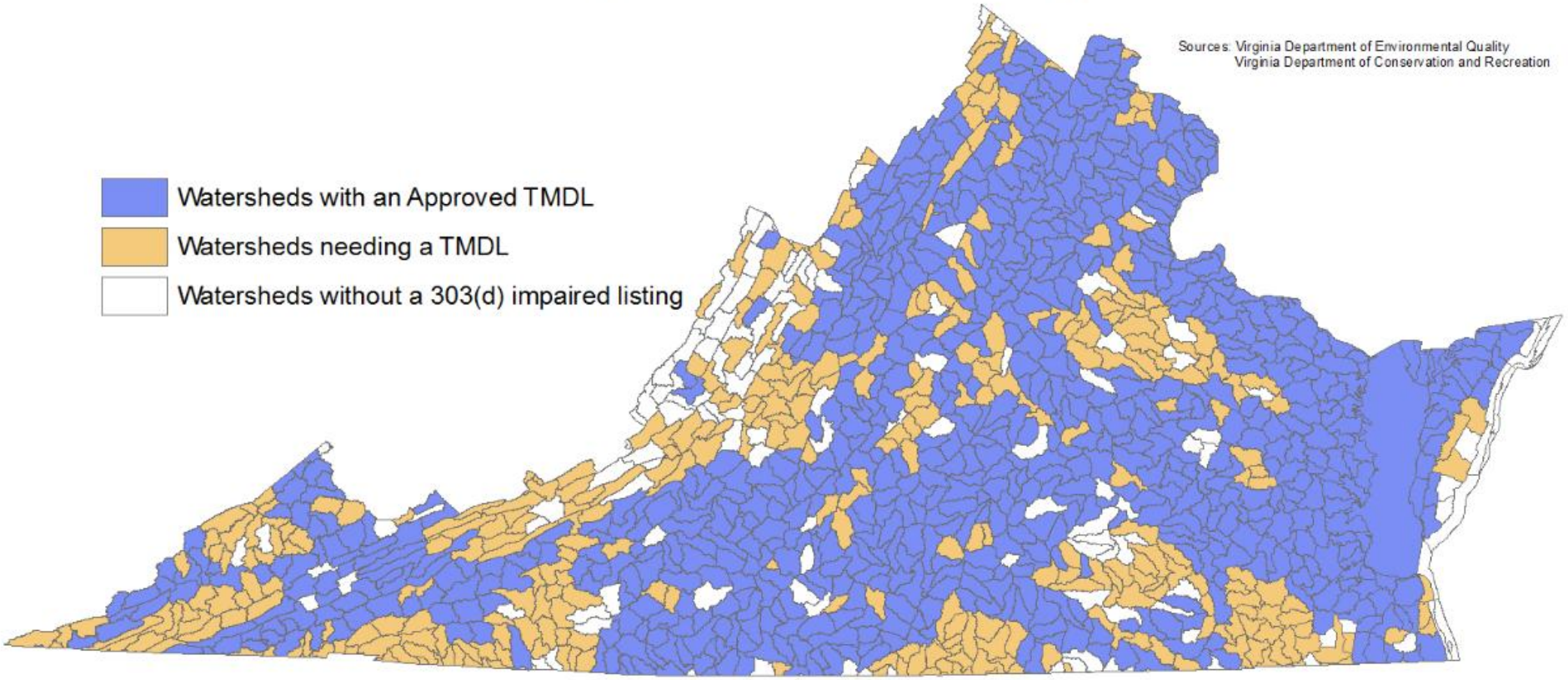
- 46% of SAV restoration goal met (target is 77,463 acres)
- Full attainment of SAV use found in parts of each major tidal tributary, except Eastern Shore



Steps in Total Maximum Daily Load (TMDL) Process

- Place Impaired Waters on 303(d) List due to Water Quality Standards violations
- Develop TMDL for Impaired Waters:
  - 959 developed through 2013
  - Nearly 1,000 more TMDLs to develop
- Develop TMDL Implementation Plan:
  - 336 completed through 2013
  - 6 more in progress
- Remove Waters from 303(d) List when Water Quality Standards achieved

TMDL Completion Status in Virginia



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Note: Some watersheds have multiple impairments with differing TMDL completion dates.
Natural impairments (Category 4C) do not require a TMDL and are excluded from this tally.
TMDL status is as of June 2014.

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Questions?